

SONDELTOX are 4-20mA detectors using electrochemical sensors for the detection of toxic gases & O<sub>2</sub>. They are compatible with DURGAS (all using interface) and with any other system provided of 4-20mA standard input.

Available for these gases; Carbon monoxide (CO), Nitrogen dioxide (NO<sub>2</sub>), Sulphur dioxide (SO<sub>2</sub>), Nitrogen monoxide (NO), Hydrogen sulphide (H<sub>2</sub>S), Chlorine (Cl<sub>2</sub>), Oxygen (O<sub>2</sub>) & Hydrogen (H<sub>2</sub>).



### MEASUREMENT RANGE (in ppm)

<b>CO</b>	0-50, 0-200, <b>0-300*</b> , 0-500
<b>NO<sub>2</sub></b>	0-10, <b>0-20*</b> , 0-50, 0-300
<b>SO<sub>2</sub></b>	0-10, <b>0-20</b> , 0-30, 0-50, 0-100, 0-200
<b>NO</b>	<b>0-100*</b> , 0-300
<b>H<sub>2</sub>S</b>	0-5, 0-10, 0-20, 0-30, 0-50, <b>0-100</b> , 0-200, 0-300
<b>Cl<sub>2</sub></b>	0-5, <b>0-10</b> , 0-30
<b>O<sub>2</sub></b>	0-25 (in %)
<b>H<sub>2</sub></b>	0-5%

\* CO-NO<sub>2</sub>-NO according to EN-50545

## TECHNICAL CHARACTERISTICS (under 20°C / 50% RH / 1013 mBar conditions)

	CO	NO <sub>2</sub>	SO <sub>2</sub>	NO	H <sub>2</sub> S	O <sub>2</sub>	Cl <sub>2</sub>	H <sub>2</sub>
<b>Power supply / Consumption</b>	From 10 to 35V DC / 21mA max. From 24 to 35 VDC display model							
<b>Resolution</b>	≈ 5 ppm	≈ 0.5 ppm	≈ 1 ppm	≈ 0.5 ppm	≈ 0.25 ppm	≈ 0.1%	≈ 0.1 ppm	≈ 0.15%
<b>Measurement Range</b>	0-300ppm	0-20ppm	0-200ppm	0-100ppm	0-200ppm	0-25%	0-10ppm	0-5%
<b>Repeatability</b>	1% F.S.	2% F.S.	2% F.S.	2% F.S.	1% F.S.	1% F.S.	2% F.S.	2% F.S.
<b>Time of response</b>	T90<30s	T90<35s	T90<15s	T90<10s	T90<35s	T90<15s	T90<60s	T90<30s
<b>Temperature range</b>	-20°C to +50°C							
<b>Pressure range</b>	Atmospheric ± 10%							
<b>Pressure coefficient</b>	0,020 ± 0,008% signal/mBar	without data	without data	0.016% signal/mBar	0,008 ± 0,002% signal/mBar	0.02% signal/mBar	without data	0,009 ± 0.003% signal/mBar
<b>Enclosure</b>	IP65							
<b>Relative humidity range</b>	From 15 to 90% without condensation							
<b>Maximum zero change (+20 °C to +40 °C)</b>	3ppm	0.3ppm	0.1ppm	1ppm	2ppm	3%	0.2ppm	10ppm
<b>Output linearity</b>	Linear in full range							
<b>Output drift</b>	←5% / year	←2% / month	←2% / month	←2% / month	←2% / month	←5% / year	←2% / month	←2% / month
<b>Output impedance</b>	4MΩ	4MΩ	4MΩ	4MΩ	4MΩ	15MΩ	4MΩ	4MΩ
<b>Expected operation life</b>	3 years on air	2 years on air	2 years on air	3 years on air	2 years on air	2 years at 20% O <sub>2</sub>	2 years on air	2 years on air
<b>Storage time (months)</b>	6	6	6	6	6	2	6	6
<b>Storage temperature</b>	0-50°C							
<b>Coverage area (m<sup>2</sup>) Approx</b>	200	100	200	150	150	200	100	100
<b>Installation height -from floor- (cm)</b>	150-200	40/50	30/40	100	100	170-200	100	30/40 cm from ceiling
<b>Measurements (mm) Weight (gr) Approx</b>	125 x 150 x 63 - 300							

**DURAN ELECTRONICA CALIBRATES ONE BY ONE ALL DETECTORS USING CALIBRATION GAS  
VERIFY THE ZEROING AT LEAST ONCE IN A YEAR**

## INTERFERRING GASES

SONDELTOX has been tested with several commonly cross-interfering gases and the results are expressed in the table below (in ppm):

		SONDELTOX						
		CO	H <sub>2</sub> S	SO <sub>2</sub>	NO	NO <sub>2</sub>	Cl <sub>2</sub>	H <sub>2</sub>
Interfering Gases	CO	-	300 / ≤6	300 / <3	300 / 0	300 / 0	300 / 0	300 / <50
	H <sub>2</sub> S	5 / >1	-	15 / ≈ 20	15 / ≈ 5	15 / ≈ -3	15 / ≈ 1,5	15 / <3
	SO <sub>2</sub>	5 / 0	5 / <1	-	5 / 0	5 / 0	5 / 0	5 / 0
	NO	35 / <3,5	35 / 0	35 / 0	-	35 / 0	35 / 0	35 / ≈ 10
	NO <sub>2</sub>	5 / 0	5 / ≈ -1	5 / ≈ 6	100 / 0	-	5 / ≈ 5	5 / 0
	Cl <sub>2</sub>	1 / 0	1 / ≈ 0,1	1 / ≈ 0.5	1 / 0	1 / ≈ 1X	-	1 / 0
	H <sub>2</sub>	100 / <60	100 / <0,2	100 / 0	100 / 0	100 / 0	100 / 0	-
	HCN	10 / 0	10 / 0	10 / ≈ 5	10 / 0	10 / 0	10 / 0	10 / ≈ 3
	HCl	5 / 0	5 / 0	5 / 0	5 / <1	5 / 0	5 / 0	5 / 0
	Ethylene	100 / <75	100 / 0	100 / 0	100 / 0	100 / 0	100 / 0	100 / ≈ 80

SONDELTOX CO is provided with a filter to minimize H<sub>2</sub>S influence, SO<sub>2</sub> and other interfering gases.

## CONNECTION

Use 2 x 1 mm<sup>2</sup> shield cable for power supply.

GREEN Cable:

Zeroing (multimeter positive borne)

YELLOW Cable:

Zeroing (multimeter negative borne)

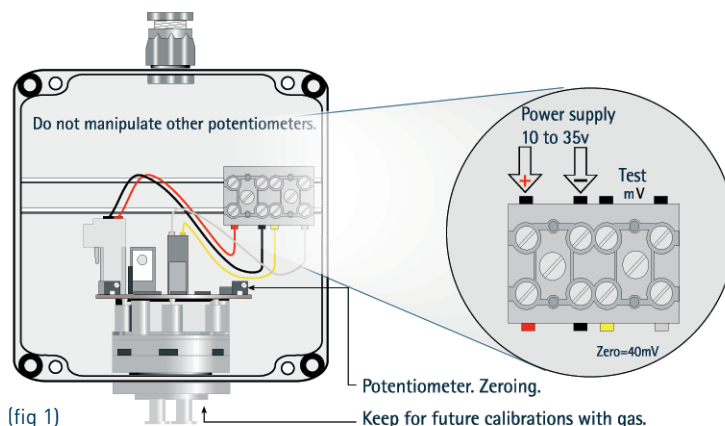
BLACK Cable:

Negative of power supply. 4-20mA Output.

RED Cable:

Positive of power supply (10 to 35V)

4-20mA Output.



(fig 1)

## ZEROING / TOXIC GASES

For SONDELTOX detectors zeroing –except for SONDELTOX O<sub>2</sub> – please proceed as follows:

- 1- Cover the detector during 15 min.
- 2.-Place a multimeter at the scale of 200mV, in parallel, with the yellow and green cable (fig 1).
- 3- Adjust through the ZERO potentiometer of the detector circuit until a reading of 40mV (4mA) is reached.

4- Remove the detector plug. With the plug provided and keep it for future testings.

Oxygen:

For SONDELTOX O<sub>2</sub> zeroing, adjust the potentiometer until obtaining a measurement of 173,76mV, equivalent to 20.9% of O<sub>2</sub>, in a wide and well ventilated room.

Although for better precision it is recommended that O<sub>2</sub> at 25% is used.

The detectors recalibration with gas must be carried out at our laboratories.

## GUARANTEE

SONDELTOX is guaranteed against any manufacturing defect for 1 year from the date of purchase. The guarantee covers the total repair of the equipment and will only be valid if the equipment has been installed by a competent person and following the specifications in this manual. Negligent use or installation will exempt DURAN ELECTRONICA from its responsibilities for damage caused to property and/or people and from the fulfilment of the terms of this guarantee.

The guarantee does not cover:

- Installations, periodical checks and maintenance.
  - Repairs caused by improper handling, inappropriate use, negligence, overload, insufficient power supply or neglecting the equipment, voltage shorts, defective installations and other external causes.
  - Repairs or adjustments carried out by personnel not authorised by DURAN ELECTRONICA.
  - Neither transport cost.
- DURAN ELECTRONICA reserves the right to carry out improvements or to include modifications in this manual without prior notice.